

September 2015 SPCC AMENDMENTS

AMENDMENTS

Administrative amendments are provided to the SPCC Plan describing 1) adequate general secondary containment exists for the process areas of the refinery and 6 separator, 2) the typical failure mode and volume of oil that would reach 6 separator in the event of a release from heat exchangers, and 3) the implementation of the new "Use of Lake Water Policy".

Administrative Amendment

Waste Water Treatment Plant Oil Handling Capabilities

The Waste Water Treatment Plant (WWTP) utilizes two very large storm surge tanks (10.2 Million gallon, and 11.4 Million gallon) to stabilize and equalize wastewater flows for processing. Wastewater remains in these tanks for a sufficient amount of time to allow for oil water separation. These tanks can be used to receive process sewer rundown and to separate large amounts of oil that may be accidentally released to the sewer system. In extreme cases of wastewater and oil flow, plant operators have the ability to move and redirect flows from one tank to the other. This allows the collection and separation of an oily sewer rundown during a process upset in one tank and the other tank to remain in service feeding the WWTP to maintain feed stability and effluent quality. As one tank empties, the tanks can swap service to continue to allow stable water feed quality to the WWTP.

Managing the WWTP as described above results in an oil handling capacity of 230,400 barrels. In the event of a release from any of the process units to the sewer system, the WWTP would be able to process a continuous release of oil at a rate of 1,200 barrels per hour, for a period of 8 days before overwhelming the WWTP. At this point, 24,000 barrels of oil would have been sent to the recovered oil system for reprocessing within the refinery and the remainder of the oil, 206,400 barrels, would be contained in the surge tanks waiting processing.

All process unit areas in the refinery have curbing and culverting which directs flow to local process sewer drains. These drains tie into one main line which directs process sewer water to the WWTP, with an oil handling capacity of 230,400 barrels. As explained above, the WWTP has significant capacity for oil collection in the event of a significant oil release to the sewer system in the surge tanks.

Process units within the refinery are designed, operated and maintained as independent operating units. In the event of an emergency, the unit operators can safely shut down the unit without impacting safe operations of other units. If a catastrophic event occurred that required immediate evacuations of the unit, it could be safely shut down remotely from the central control center. During the shutdown process materials are not sent to the sewers or WWTP.

Administrative Amendment

This amendment consists of recognizing extensive work performed to improve the ability to detect and recover any oil in the Once-Through Cooling Water (OTCW) system as well as the development and implementation of the new "Use of Lake Water Policy".

Detect And Recover Oil in the OTCW system

The refinery has been doing extensive work to improve the ability to detect and recover oil in the OTCW system. This work includes:

- 1) Installation of Detection Look Box and online oil sheen detector at 12PS OTCW return and an online oil sheen detection analyzer at the inlet of 6 Separator.
- 2) Installation of additional on-line oil sheen detection analyzers, which will provide alarms to potential contamination at every unit using OTCW to be complete by the end of 2016.
- 3) Implementation of OTCW return monthly VOC emissions monitoring in accordance with air pollution rules 40 CFR 63.654. The monitoring method is called a modified El Paso method. With this a continuous sample of the cooling water is sent through a miniature countercurrent air-water stripper where the stripped air is analyzed by a flame ionization detector (FID) for VOCs. The OTCW system has approximately 12 routine sample locations and other troubleshooting locations. The rule requires the facility to identify the source of any leak, eliminate the leak, and re-monitor within 45 days. A leak is defined as 6.2 ppmv VOC. If the leak cannot be repaired without a process unit shutdown and is less than 62 ppmv VOC, the repair can be delayed until the next unit shut down. During the delay of repair period, if the leak ever exceeds 62 ppmv VOC, then the unit must be shut down and the source of the leak must be repaired and remonitored within 30 days of the date the leak exceeded 62 ppmv VOC. Industry experience indicates that leaks at these levels are generally extremely small and not detected by normal means. Therefore, under this rule WBU is equipped to find very small leaks earlier and repairing them before they become larger leaks that threaten water effluent limits. The monitoring method is best at detecting materials with a boiling point less than 140F. For the heavier hydrocarbons, like lube oil, the leak would be detected at the 6 Separator oil sheen detection system.

The typical failure mode from oil filled equipment to the OTCW system and 6 Separator is a leak from heat exchanger tube leak sources. The most likely quantity of oil that would be discharged based on that failure mode and the capacity of six separator to recover that quantity of oil is presented below.

The types of oils in heat exchangers vary from more volatile hydrocarbons such as naphthas to less volatile distillates, gas oils, and lube oils.

A typical tube leak would consist of about 3-30 gallons of naptha, distillate, or gas oil per day to 6 Separator. A typical lube oil exchanger tube leak would consist of slightly less volume of 3 – 15 gallons per day to 6 Separator. Most of this oil will be separated and removed from 6 separator with adsorbents. With a tube leak from these sources, depending upon the type of oil, BP expects the following approximate discharges from outfall 002 :

naphtha:	0.4 – 4 gallons / day
distillate:	0.4 – 7 gallons / day
gas oil:	0.7 – 7 gallons / day
lube oil	0.7 – 4 gallons / day

The NPDES permit considers and accommodates discharges of this magnitude as part of the permit limit, provided no sheen occurs at the outfall.

Administrative Amendment

Lake Water Use Policy

The refinery has recently implemented a new policy designed to decrease the potential for oil discharge to Lake Michigan through the OTCW system. This new policy is entitled "Use of Lake Water Policy (D16)".